

FRIDRIKSEN, V.K.; PAL'MINA, K.B.; TRET'YAKOV, A.V.

Changes in the mechanical properties of metals during cold
rolling. Prokat. proizv. no.2:14-20 '60. (MIRA 14:11)
(Metals---Cold working)
(Rolling(Metalwork))

TRET'YAKOV, A.V.

Modernization of a six-roll mill for cold rolling. Prokat.
proizv. no.2:147-152 '60. (MIRA 14:11)
(Rolling mills)

TRET'YAKOV, A.V.; POZINA, R.A.; GARBER, E.A.

Roll durability on cold rolling mills. Metallurg 6 no.12:29-
33 D '61. (MIRA 14:11)

1. Nauchno-issledovatel'skiy institut tyazhelogo mashinostroyeniya
Uralmashzavoda.
(Rolls(Iron mills)--Defects)

S/122/62/000/007/003/006
D262/D308

AUTHORS: Tret'yakov, A.V., Candidate of Technical Sciences;
Garber, E.A., Engineer; Pozina, R.A., Engineer

TITLE: Calculations of temperature stresses in working
rolls during cold rolling

PERIODICAL: Vestnik mashinostroyeniya, no. 7, 1962, 28 - 30

TEXT: Radial, circumferential, and axial temperature stresses are calculated when the temperature changes across the section of the roll are represented by a) logarithmic curve, b) straight line, c) concave curve. The results of the calculations of some typical examples show that in all cases they are similar. The effect of the temperature stresses on the stress conditions of the rolls during the rolling operation (contact stresses) is also investigated and a method of internal cooling of the rolls is proposed. There are 4 figures. ✓

TRET'YAKOV, A.V.; AL'BREKHT, E.G.

Empirical formula for the determination of the mechanical
properties of metals during cold rolling. Prokat. proizv.
no.2:21-24 '60. (MIRA 14:11)

(Metals---Cold working)
(Rolling(Metalwork))

VYDRIN, V.N., kand.tekhn.nauk; BEREZIN, Ye.N., inzh.; KHIMICH, G.L.;
TRET'YAKOV, A.V.; FEDOROV, M.I.; VASHCHENKO, Yu.I.

"Mechanical equipment of rolling mills" by A.A. Koroleva. Re-
viewed by V.N. Vydrin and others. Stal' 22 no.1:61-63 Ja '62.
(MIRA 14:12)

- 1.- Chelyabinskiy politekhnicheskii institut (for Vydrin, Berezin).
2. Nauchno-issledovatel'skiy konstruktorsko-tehnologicheskii
institut tyazhelogo mashinostroyeniya Uralmashzavoda i Ural'skiy
politekhnicheskii institut (for Khimich, Tret'yakov, Fedorov).
(Rolling mills--Equipment and supplies)
(Koroleva, A.A.)

TRET'YAKOV, A.V., kand.tekhn.nauk; AL'BREKHT, E.G.; SOLOV'YEV, P.I., inzh.

Calculating the pressure on the cylinder of a coiling machine.
Vest.mash. 41 no.8:39-42 Ag '61. (MIRA 14:8)
(Rolling mills)

TRET'YAKOV, A.V. [deceased]

Effect of the depth of subsidence on metamorphism. Trudy
SNIIGGIMS no.9167-75 '60. (MIRA 14:7)
(Metamorphism (Geology))

TERENT'YEV, V.S., kand.tekhn.nauk; AVERBUKH, L.D., Inzh.; TRETYAKOV, A.V.,
kand.tekhn.nauk

Using hydropneumatic servo systems for strip centering along
a machine unit axis. Spor. st. NIITIAZHMASHa Uralmashzavoda
no.6&140-145 '65. (MIRA 18:11)

TRET'YAKOV, A.V., kand. tekhn. nauk; GRACHEV, A.V., inzh.; TOKMAKOV, A.A., inzh.;
OVODENKO, M.B., inzh.; KONOVALOV, P.G., inzh.

Redesigning the cooling system of the 2800 mill. Sbor. st.
NII TIAZHMASHa Uralmashzavoda no. 6x156-160 '65.

(MIRA 18:11)

KRASKOVSKIY, Ye.Ia., kand.tekhn.nauk; TRET'YAKOV, A.V., kand.tekhn.nauk;
YAKOVIEV, V.F., kand.tekhn.nauk; BONDYUGIN, V.M., inzh.; ABROSIMOV,
V.I., inzh.

Studying rolling friction on roll models. Sber. st. NIITIAZHMASHa
Uralmashzavoda no.6s189-205 '65.

(MIRA 18:11)

YAKOVLEV, V.F., kand.tekhn.nauk; TRET'YAKOV, A.V., kand.tekhn.nauk;
KRASKOVSKIY, Ye.Ya., kand.tekhn.nauk; BONDYUGIN, V.M., inzh.;
ABROSIMOV, V.I., inzh.

Studying contact stresses by means of electric tensometric roll
models. Sbor. st. NIITIAZHMASH, Uralmashzavoda no.6:211-227 '65.
(MIRA 18:11)

TRET'YAKOV, A.V., kand.tekhn.nauk; GABER, E.A., inzh.; OZOLIN, Yu.A., inzh.

Investigating the performance of cold rolling mill rolls with
internal water cooling. Sbor. st. NIITIAZHMASha Uralmashzavod
no.63239-243 '65. (MIRA 18:13)

GORENSHTEYN, M.N., dotcent, kand. tekhn. nauk; TISEL'KOV, A.V., kand.
tekhn. nauk; GARBER, E.A., inzh.; GRACHEV, A.V., inzh.

Temperature conditions of the service of rolls on three-high
sheet rolling mills, Stal' 25 no.8:841-842 S '65. (MIRA 18:9)

1. Zhdanovskiy metallurgicheskiy institut (for Gorenshteyn).

TRET'YAKOV, A.V., kand.tekhn.nauk; LOKSHIN, E.Ye., inzh.; TROFIMOV, G.K., inzh.

Changes in the mechanical properties of steel and power
consumption during cold rolling on a 1680 reversing mill.
Sbor. st. NIITIAZHMASH, Uralsmashzavoda no.6:250-254 '65.
(MIRA 18:11)

PHASE I BOOK EXPLOITATION SOV/4063

Tret'yakov, Andrey Vladimirovich, and Konstantin Mikhaylovich Radchenko

Izmeneniye mekhanicheskikh svoystv metallov i splavov pri kholodnoy prokatke (Changes in Mechanical Properties of Metals and Alloys Subjected to Cold Rolling) Sverdlovsk, Metallurgizdat, 1960. 84 p. Errata slip inserted. 3,200 copies printed.

Ed.: M.A. Benyakovskiy; Ed. of Publishing House: N.N. Tsymbalist; Tech. Ed.: Ye.D. Turkina.

PURPOSE: The book is intended for technical personnel of metallurgical and machinery plants and for staff members of design and scientific research institutes. It can also be used by students of schools of higher technical education.

COVERAGE: The book contains data on the mechanical properties of cold-rolled ferrous and nonferrous metals and alloys at varying degrees of deformation. Methods of determining mechanical properties by tensile tests are described. The effect of some para-

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Changes in Mechanical (Cont.)

SOV/4063

meters of cold rolling on ultimate strength, yield point, and unit elongation is examined. No personalities are mentioned. There are 44 references: 30 Soviet, 9 English, and 5 German.

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Changes in Mechanical (Cont.)

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Curves of Variations of Ultimate Strength, Yield Point, and Unit
Elongation With Percentage Reduction in Cold Rolling

24

Appendix

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Bibliography

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AVAILABLE: Library of Congress

Card 3/3

VK/pw/jb
8-1-60

TRETYAKOV, Andrey Vladimirovich; GRACHEV, Anatoliy Vasil'yevich;
ORESHKIN, Pavel Timofeyevich

[Temperature conditions in the operation of rolling mill
rolls] Temperaturnyi rezhim raboty valkov prokatnykh stan-
kov. Moskva, Izd-vo "Metallurgiya," 1964. 110 p.

(MIRA 17:6)

TRET'YAKOV, Andrey Vladimirovich; GALLAY, B.M., redaktor; VALOV, N.A.,
redaktor izdatel'stva; KARASEV, A.I., tekhnicheskiy redaktor

[Rolling thin strips] Prokatka tonchaishai lenty. Moskva, Gos.
nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii,
1957. 96 p. (MIRA 10:7)
(Rolling (Metalwork))

TRBT'YAKOV, B.

Soviet military pride. No 8.

Tankist, No 12, 1948.

~~THE~~ YAKOV, B. (M.), Col, Candidate of Military Sciences (Editor of Tankist)

Author of article, "Soviet Tankmen," honoring Soviet Tankmen's Day,
26 September 1954. Moskovskaya Pravda, Moscow, 26 Sep 54

SO: SUM 291, 2 Dec 1954

TRET'YAKOV, B.

Construction Industry

Standardizing material consumption in capital construction. Za ekon. mat. no. 2, Sept. 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

DOLZHENKOV, A., prepodavatel', kand.tekhn.nauk; TRET'YAKOV, B., prepodavatel',
kand.tekhn.nauk

Gas welding. Sel'.mekh. no.3:41-44 '62.

(MIRA 15:3)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya
imeni K.A.Timiryazeva.

(Gas welding and cutting)

TRET'YAKOV, B.
PANTKOV, L. & TRET'YAKOV, B.

The armored tank and mechanized forces of the Soviet Army. "o 10.

Tankist, No 12, 1948.

I 02991-67 FWT(m)/FWP(t)/ETI IJP(c) MJW/JD/JG

ACC NR: AP6033155

SOURCE CODE: UR/0105/66/000/010/0082/0083

AUTHOR: Gorina, N. B.; Gruznov, Yu. A.; Kolobanov, V. V.; Matorin, V. I.; Prokoshin, A. F.; Rad'kov, A. I.; Sokolov, V. I.; Tret'yakov, B. N.; Fedotov, L. N.; Khromov, S. M.; Kuleshov, V. F.

ORG: Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: The 65BT superconducting alloy

SOURCE: Elektrichestvo, no. 10, 1966; 82-83

TOPIC TAGS: superconducting alloy, superconductivity

ABSTRACT: A new, relatively low cost Nb-Ti based alloy, designated 65BT, which meets all the major requirements for superconductors has been developed. Because of its properties it can be used in 1) magnetizing devices, such as superconducting solenoids, for field strengths varying from 20 to 80 koe, and 2) wires 0.1—0.3 mm in diameter and up to 12,000 m long and tapes 5 μ thick. The alloy, which contains 65% niobium, 25% titanium, and several other components, is produced in

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I. 02991-67

ACC NR: AP6033155

an arc furnace and, after thermal processing, is cold drawn. For use in superconducting solenoids, the alloy requires a 0.02—0.05-mm copper coating. Orig. art. has: 1 table.

SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 5099

awm

Card 2/2

TRET'YAKOV, B. S., Cand Tech Sci -- (diss) "Study of the Effect
of ~~Different Time~~ ^{Various Phases} of Change of Oil in ~~the~~ Motors D-54 upon the
Wearing Away of Their Parts." Mos, 1957. 20 pp (Min of Agriculture USSR, Mos Inst of Mechanization and Electrification of
Agriculture), 110 copies (KL, 47-57, 88)

38

ITINSKAYA, N.I., kand.tekhn.nauk, dotsent; DEGTEREV, M.D., kand.tekhn.nauk,
assistant; KUZNETSOV, A.V., aspirant; TRET'YAKOV, B.S., assistant

Effect of the prolonged use of crankcase oil on the performance of
DT-54 tractors. Trudy MIMESKH 6:351-364 '59. (MIRA 14:5)
(Tractors--Lubrication)

7

Effect of disturbance of short-range order on the electrical properties of solid solutions with tetrahedral structure of distribution of atoms.
D. I. Tret'yakov.

Some electrical properties of solid solutions in the system
 $\text{AgInTe}_2\text{-2InSb}$. S. M. Mamayev, V. D. Prochukhan.
(Presented by D. I. Tret'yakov--15 minutes).

(Paper not presented).]

Investigation of thermally stimulated current in vitreous $\text{Tl}_2\text{Se}\cdot\text{As}_2\text{Te}_3$.
A. M. Andriyash, B. T. Kolomiyets.

Measurement of the mobility of current carriers in vitreous chalcogenide semiconductors. I. B. Ivkin, B. T. Kolomiyets, E. A. Lebedev.

Oxychalcogenide Glasses. B. T. Kolomiyets, V. P. Shilo.
(Presented by B. T. Kolomiyets--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

Morphological features of crystals of GaP. G. V. Averkiyeva,
A. S. Borshchevskiy, G. K. Kalyuzhnaya, A. D. Smirnova, D. N. Tret'yakov,
N. N. Takhtareva (10 minutes).

Features of the growth of crystals of silicon carbide of the cubic
modification from the gaseous phase. A. A. Pletyushkin, S. N. Gorin,
L. M. Ivanova (10 minutes).

Investigation of the physical properties of semiconducting compounds
with the lattice of ZnS and NaCl in the melting region and liquid
state. V. M. Glazov, S. N. Chizhevskaya, N. N. Glagoleva (10 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

ACCESSION NR: AP4039269

S/0078/64/009/006/1497/1499

AUTHOR: Kalyuzhnaya, A. G.; Polushina, I. K.; Tret'yakov, D. N.

TITLE: Gallium-phosphorus system

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 6, 1964,
1497-1499

TOPIC TAGS: gallium phosphorus system, gallium phosphide, phase
diagram, liquidus curve, solution heat, III^{IV} compound, Schroder
Van't Hoff law

ABSTRACT: The portion of the liquidus curve of the Ga-P phase
diagram for alloys containing 3 to 17.5 at% P has been established
by differential thermal analysis of the mixtures of ultrapure Ga
and GaP more accurately than was possible in the past. The heat
of solution of GaP in Ga was derived graphically and the data were
correlated with corresponding data previously obtained for the InB^{IV}
and GaB^{IV} compounds. It was shown that 1) the heat of solution of

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ACCESSION NR: AP4039269

0.25 molar gallium phosphide is the highest of all $Al_{1-x}Ga_xP$ compounds studied, 2) the heat of solution in the GaP series unexpectedly decreases from $GaSb$ to $GaAs$, and 3) a deviation from the Schroder-Van't Hoff law is highly probable when the stoichiometric composition is approached in the GaP system, as was observed in other $Al_{1-x}Ga_xP$ systems. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 25Nov63

DATE ACQ: 18Jun64

ENCL: 00

SUB CODE: GC, MT

NO REF SOV: 002

OTHER: 005

Card: 2/2

ACCESSION NR: AP4041359

S/0048/64/028/006/0985/0988

AUTHOR: Borshchevskiy, A.S.; Kalyuzhnaya, G.A.; Smirnova, A.D.; Takhtareva, N.K.; Tret'yakov, D.N.

TITLE: Morphological characteristics of laminar gallium phosphide crystals /Report, Third Conference on Semiconductor Compounds held in Kishinev 16-21 Sep 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.6, 1964, 985-988, and insert facing p. 988

TOPIC TAGS: crystal structure, crystal growth, gallium compound

ABSTRACT: Gallium phosphide crystals were obtained by slowly cooling dilute solutions of phosphorus in gallium and subsequently separating the precipitated crystals from the excess gallium, as proposed by G.Wolff, P.H.Keck and J.D.Broder (Bull. Amer.Phys.Soc.29,116,1954). The crystals thus obtained had the zincblende structure, were laminar in form with the (111) faces developed, and ranged in size from $15 \times 10 \times 1 \text{ mm}^3$ to a few hundred microns. The pure crystals were light orange in color and uniformly transparent. The crystal plates had the form of equilateral triangles, 60° rhombi, regular hexagons, or were of mixed shape. A drawing showing the faceting of the simplest rhombic crystals is given in Fig.1 of the Enclosure. The two

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ACCESSION NR: AP4041359

well developed (111) faces reacted differently to etching with HCl: one face retained its initial specular luster, and the other acquired a mat surface. This polarity is attributed to the regular alternation of planes consisting of gallium or phosphorus atoms respectively. Triangular etch pits marking dislocations were observed on the (111) faces. The dislocation density varied greatly even from place to place on the same crystal, and the total variation among the crystals was from 10^3 to 10^6 cm⁻². Twinning planes parallel to the developed (111) faces were found; the twinning appeared to involve rotation of the two portions of the crystal about the $\langle 111 \rangle$ axis. Dark lines were also observed marking the long diagonal of the rhombic plates; these are believed to mark the central portion of the dendritic structure. The growth of the crystals is discussed at some length in rather general terms. It is concluded that the laminar form is a consequence of the non-equilibrium conditions and the excess of one component, that more than one growth mechanism is involved, and that growth probably proceeds differently in the $\langle 111 \rangle$ and the $\langle \bar{1}\bar{1}\bar{1} \rangle$ directions. Orig.art.has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: SS, IC

Card 2/3

NR REF SOV: 001

ENCL: 01

OTHER: 002

ACCESSION NR: AP4041359

ENCLOSURE:01

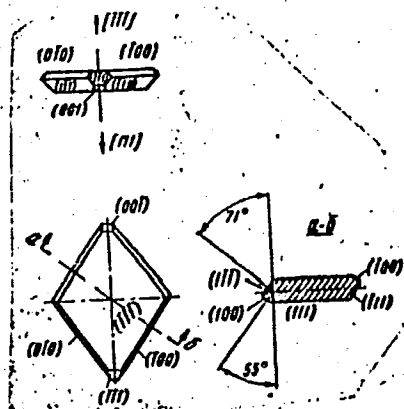


Fig.1. Faceting of rhombic laminar gallium phosphide crystals.

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KALYUZHNAIA, A.G.; POLUSHINA, I.K.; TRET'YAKOV, D.N.

System Ga - P. Zmur. neorg. khim. 9 no.6:1497-1499 Je '63
(MIRA 17:8)

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CIA-RDP86-00513R001756530006-8"

are suggested. Orig. att. nos: 1 UNCLD.

Journal of Mathematical Sciences, New York, 1992, Vol. 65, No. 1, pp. 1-10. Translated from *Doklady Akademii Nauk SSSR*, 1991, Vol. 269, No. 1, pp. 1-5.

L 27207-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6011568

SOURCE CODE: UR/0051/66/020/003/0499/0501

AUTHORS: Oksman, Ya. A.; Smirnov, V. N.; Smirnova, A. D.;
Tret'yakov, D. N.

65
B

ORG: none

TITLE: High frequency electroluminescence of polycrystalline gallium phosphide

21

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 499-501

TOPIC TAGS: gallium optic material, phosphide, electroluminescence, light excitation, luminescence center, *crystal*

ABSTRACT: The authors present new experimental data which make it possible to make some assumptions concerning the mechanism of high frequency electroluminescence of powdered GaP. The powder was prepared from platelike GaP obtained by a method described by A. S. Borshchevskiy et al. (Izv. AN SSSR ser. fiz. v. 28, 985, 1964). The powdered crystals (grain dimension not larger than 50 μ) were mixed with malamine formaldehyde resin and deposited (0.3 mm layer) on a metallic electrode. The second electrode of the capacitor was a fine-mesh grid insulated from the layer with a mica linear 10 μ thick. The capacitor was immersed either in liquid nitrogen or in carbon tetrachloride at room temperature.

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UDC: 535.376

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ACC NR: AP6011568

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The electroluminescence was excited by microwave pulses of 50 micro-seconds, with a repetition rate 50 -- 100 cps. The electroluminescence was registered through a window in the Dewar glass using a monochromator and photomultiplier. Alloying with zinc increased the electroluminescence intensity. The electroluminescence maximum was at 685 nm at 77K and 710 nm at 300K, in agreement with published data. The dependence of the electroluminescence brightness on the field intensity was proportional to a power-law function with exponents 2.5 -- 3.3, and the frequency dependence of the brightness was close to linear. It is concluded on the basis of the experimental data that the most probable mechanism of high-frequency electroluminescence of polycrystalline GaP is impact excitation of the lattice and of the centers, without participation on the part of the internal inhomogeneities of the crystal. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 29May65/ ORIG REF: 002/ OTH REF: 003

Card

2/2 CC

VAYPOLIN, A.A.; GORYUNOVA, N.A.; OSMANOV, E.O.; RUD', Yu.V.; TRET'YAKOV, D.N.

Study of ZnSiP, CdSiP, and ZnSiAs crystals. Dokl. AN SSSR
154 no.5:1116-1119 F'64. (MIRA 17:2)

1. Institut fiziki AN AzSSR i Fiziko-tekhnicheskiiy institut
im. A.F. Ioffe AN SSSR. Predstavleno akademikom B.P.
Konstantinovym.

KRYZHANOVSKIY, B.P.; KUZNETSOV, A.Ya.; TRET'YAKOV, D.N.

Electrochemical deposition of metals on glass and porcelain.
Zhur. prikl. khim. 33 no.12:2795-2796 D '60. (MIRA 14:1)
(Electroplating)

67407

SOV/181-1-9-31/31

5.2600
5.1185
24(3)

AUTHORS:

Borshchevskiy, A. S., Tret'yakov, D. N.

TITLE:

The Synthesis of Semiconductor Materials by the Application of Vibration Intermixing

PERIODICAL:

Fizika tverdogo tela, 1959, Vol 1, Nr 9, pp 1483 - 1485 (USSR)

ABSTRACT:

In the synthesis by direct melting of the elements in a soldered ampul, a solid product is formed in the reaction zone; thus, much time is wasted, and the diffusion of the reacting components into this zone is rendered more difficult. Therefore, the authors accelerated the synthesis by intensive intermixing, and selected the vibration as the most effective and simplest procedure for carrying out this intermixing. In this manner they investigated the binary compounds InAs, GaAs, InPb, Ga_2S_3 , ZnSe, and CdSe as well as the ternary alloys $3\text{InAs}.\text{InSb}$, $3\text{GaAs}.\text{GaSb}$, $4\text{GaAs}.\text{InAs}$, $4\text{GaAs}.\text{ZnSe}$. Furthermore, several more alloys of the pseudobinary section InAs-AlAs were investigated, in which solid solutions were observed for the first time. The authors were also able to extend the applicability of the direct melting and in this

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The Synthesis of Semiconductor Materials by the
Application of Vibration Intermixing

manner they obtained the interesting binary compounds GaP and AlAs. In all their syntheses the authors used initial material cut into pieces and without pretreatment, only Zn being pickled preliminarily in hydrochloric acid. The synthesis occurred in a silite heating rod furnace of the type ShP-1. The authors' results are compared in a table with those obtained by the laboratoriya poluprovodnikov FTI (Laboratory of Semiconductors of the Institute of Physics and Technology). In the synthesis by vibration intermixing the samples were for some time kept at a temperature corresponding to a vapor pressure of 1 atmosphere of the liquid component. This, however, was not done with most of the vibration intermixing syntheses. The syntheses made without vibrator took a very long time. The outer form, the microstructure, and microhardness of the samples prepared after the old and the new procedure did not differ noticeably under the same cooling technique. The electric properties of the GaS samples prepared after the two procedures were in good mutual agreement. By the use of the vibration synthesis it was possible to shorten the duration of synthesis by the 4fold to the 25fold, moreover, it was

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The Synthesis of Semiconductor Materials by the
Application of Vibration Intermixing

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SOV/181-1-9-31/31

still possible to increase the weighed portion. The authors suggest that the capacity of the vibrator be increased in order to permit the synthesis of large amounts of materials. Furthermore, they want to increase the frequency of the vibrator up to ultrasonic frequency. Intermixing by vibration would also be suitable, in the authors' opinion, to accelerate the two-temperature procedure considerably. The application of vibration in the cooling process of the sample eliminated the porosity of the castings. By vibration intermixing it was possible to produce compounds at high temperatures, that had not been obtained before. A. D. Smirnova and N.K. Takhtareva took part in the experimental operations. The authors thank N. A. Goryunov for his continuous interest. There are 1 table and 3 references.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskii institut AN SSSR
(Leningrad Institute of Physics and Technology of the AS USSR)
SUBMITTED: April 18, 1959

Card 3/3

BORSHCHEVSKIY, A.S.; TRET'YAKOV, D.N.

Synthesis of semiconducting materials by means of vibration mixing.
Fiz. tver. tela 1 no.9:1483-1485 S '59. (MIRA 13:3)

1. Leningradskiy fiziko-tekhnicheskii institut AN SSSR.
(Semiconductors)

TRET'YAKOV, D.N.

~~Redesign of the drum casing in the first section of the LT-2~~
scutching machine. Obm. tekhn. opyt. [MLP] no.4:9 '56. (MIRA 11:10)
(Textile machinery)

ACCESSION NR: AP4016508

S/0020/64/154/005/1116/1119

AUTHORS: Vaypolin, A.A.; Goryunova, N.A.; Osmanov, E.O.; Rud' Yu. V.; Tret'yakov, D.N.

TITLE: Investigating ZnSiP_2 , CdSiP_2 , and ZnSiAs_2 crystals

SOURCE: AN SSSR. Doklady*, v. 154, no. 5, 1964, 1116-1119

TOPIC TAGS: high melting compound, forbidden zone, chalcopyrite, Debye crystallogram, right prism, phosphide crystal, xray diffraction, lattice spacing, electronic mobility, anisotropy

ABSTRACT: The lack of information on the ZnSiP_2 , CdSiP_2 and ZnSiAs_2 crystals prompted an investigation into their structure by the use of x-ray and electric measurements. The phosphide crystals are transparent and vary in color ranging from ruby color for the ZnSiP_2 to light red for the CdSiP_2 . The anisotropy of the internal

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ACCESSION NR: AP4016508

structure of these crystals is projected to their external appearance; the phosphide crystals are divided into hexahedral, pentahedral and trihedral, according to their lateral faces. They are resistant to a variety of acids and alkalis. Optical measurements have made it possible to determine the width of the forbidden zone of the crystals under consideration. These ZnSiP_2 and CdSiP_2 parameters have thus been defined for the first time. The width of the ZnSiAs_2 forbidden zone was found to be less than 2.1 ev. The microhardness of the phosphides is somewhat greater than that of their binary analogues, and their width is larger than that of the forbidden zone of the same order. As for the arsenides, their microhardness is of the same order as that of their binary analogues, and their forbidden zone is narrower. "The authors are grateful to B.P. Zakharchene and G.A. Sikharulidze for their assistance in determining the width of the forbidden zone. In conclusion, the authors express their gratitude to F.M. Gashimzade for a discussion of the results." Orig. art. has: 3 figures and 2 tables.

Card 2/3

ACCESSION NR: AP4016508

ASSOCIATION: Institut fiziki Akademii nauk AzSSR (Institute of Physics AzSSR);
Fiziko-tekhnicheskii institut im. A. F. Ioffe Akademii nauk SSSR (Physico-
technical Institute, Academy of Sciences SSSR)

SUBMITTED: 12Jul63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE PH

NO REF SOV: 004

OTHER: 005

Card 3/3

$$\text{SO}(2k, \mathbb{R}) = \text{Mat}_{2k}(\mathbb{R}) = \{A \in \text{Mat}_{2k}(\mathbb{R}) : A^T = -A\} = \{A \in \text{Mat}_{2k}(\mathbb{R}) : A^T + A = 0\} \quad (1.1)$$

TOPIC TAGS: semiconductor, diamondlike semiconductor, heterovalent semiconductor, semiconductor hardness

ABSTRACT. Alloy heteroepitaxial films of the type $\text{C}_x\text{Ge}_{1-x}$ (where x = 0.05-0.95) were prepared, representing five open isoelectron series derived from germanium, selenium, antimony, gallium, arsenic, indium, tellurium and other elements. A study of the quantitative dependence of microhardness on the composition of the isovalent solid solution of diamondlike substances yielded the formula

$$H^* = (H_a^* - H_b^*) N_a + H_b^* + KN_a(1 - N_a),$$

where H_1^* and H_2^* are the microhardnesses of the starting components "1" and "2" and

L 32212-65

ACCESSION NR: AT5005411

within the alloy; $K = \alpha$ constant; and H^* = reduced microhardness of the alloy.
Orig. art. has 1 formula and 1 table.

ASSOCIATION: None

SUBMITTED: 07/19/64

ENCL: 00

SUB CODE: SS, MT

NO REF SOV: 000

OTHER: 000

Card 2/2

5.1310

AUTHORS:

1273 2319 also 3009,3309 25663
3209 S/080/60/033/012/022/024
D209/D305
Kryzhanovskiy, B.P., Kuznetsov, A.Ya., and Tret'yakov,
D.N.

TITLE:

Electrochemical precipitation of metals on glass
and porcelain

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 12, 1960,
2795 - 2796

TEXT: The authors studied the electrochemical precipitation of Cu, Ni, Cr, Cd and Ag on glass and porcelain, a technique now in constant use as a result of the discovery of methods, whereby these materials are made electroconducting and are then employed as electrodes in galvanic baths. Their work is a continuation of previous research by A.Ya. Kuznetsov (Ref. 1: ZL, 1, 1957) and A.Ya. Kuznetsov et al (Ref. 2: Zh. pril. khimii, 32, 5, 1959), which showed the expediency of coating objects with SnO_2 to increase their surface electroconductivity. These films of SnO_2 , whose specific sur-

Card 1/3

Electrochemical precipitation ...

25663
S/080/60/033/012/022/024
D209/D305

face resistance does not exceed 20Ω , are very suitable for the galvanic precipitation of metals since their resistance R is less than that of the electrolyte. The glass or porcelain is hence coated with SnO_2 , treated with 0.2 N NaOH and immersed in the electrolyte, thus forming the cathode on which the desired metal is deposited; the anode is a plate of the same metal. A deposit of Cu with a thickness of 10μ is obtained by electrolyzing an acid sulfate solution for 1 hour at a current density of 1 - 5 mA/cm². The cohesive force of Cu with the porcelain is 150 - 180 kg/cm², as compared with 100 - 120 kg/cm² for glass. In the case of Ni a white glassy layer, 10 - 15 μ thick, results from the electrolysis of a sulfate solution with NaCl and H_2BO_3 for 40 minutes at a current density of 5 - 10 mA/cm². A black precipitate of Ni with a thickness of 20μ is prepared by electrolyzing a solution of $(\text{NH}_4)_2\text{Ni}(\text{SO}_4)_2$ for 70 minutes. Heating of these films in air at 350° markedly increases their mechanical strength, when the cohesive force of Ni with the glass amounts to 100 - 120 kg/cm². Electroly-

Card 2/3

Electrochemical precipitation ...

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D209/D305

sis of the solution of Ya.V. Vayner et al (Ref. 4: Spravochnik po zashchitno-dekorativnym pokrytiyam (Handbook on Protective Ornamental Coatings), Gos. nauch. tekhn. izdat., 1951) with a lead anode at a current density of 20 - 30 mA/cm² yields a lustrous deposit of Cr, but the authors were only able to obtain weak films of Cd (cohesive force with glass = 20 kg/cm²) on electrolyzing sulfate solutions with NaCl, H₃BO₃ and gelatin. A solution of AgCN and KCN is electrolyzed for 1 hour at a current density of 2 - 5 mA/cm² for the precipitation of thin but strong layers of Ag. In conclusion the authors note that other ceramic materials of any desired size may also be used in addition to porcelain, provided they are first coated with SnO₂. There are 4 Soviet-bloc references. X

SUBMITTED: March 30, 1960

Card 3/3

L 15492-63

ACCESSION NR: AR3003749

EWPC(q)/EWTC(m)/BDS AFFTC/ASD

JD/JG
S/0137/63/000/005/0041/0041
58

SOURCE: RZh. Metallurgiya, Abs. 56252

AUTHOR: Borshchevskiy, A. S., Tret'yakov, D. N.

TITLE: Solid solutions among semiconductor compounds -- arsenides of indium
and aluminum ✓

CITED SOURCE: Sb. Fizika, L., 1962, 14-18

TOPIC TAGS: indium arsenide, aluminum arsenide, semiconductor, X-ray dif-
fraction, thermal analysis, microhardness, substitutional solution, lattice
constant

TRANSLATION: The compounds InAs and AlAs and their alloys (3:1, 1:1, 1:3) were
prepared by means of vibrational mixing, followed by diffusion annealing at
850°. The alloys rich in InAs were homogenized for a longer period of time than
the alloys richer in AlAs (1440 hours at 3:1 and 1560 hours at 1:3), according
to the greater liquation inhomogeneity. An investigation by the X-ray method,
method of thermal analysis, and measurement of the microhardness of the prepared

Card 1/2

L 15492-63

ACCESSION NR: AR3003749

alloys showed that InAs and AlAs form solid substitutional solutions within a broad concentration range. The lattice constant varies linearly as a function of the composition. The microhardness increases when AlAs is introduced into InAs and InAs into AlAs. Bibliography of six titles. V. Vigdorovich.

DATE ACQ: 21 Jun 63

SUB CODE: ML

ENCL: CO

Card 2/2

ACC NR: AP7008519

SOURCE CODE: UR/0363/67/003/002/0260/0266

AUTHOR: Vaypolin, A. A.; Osmanov, E. O.; Tret'yakov, D. N.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences, SSSR (Fiziko-tokhnicheskii institut Akademii nauk SSSR)

TITLE: Some aspects of the chemistry of type $A^{II}B^{IV}C^V_2$ diamondlike compounds

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 3, no. 2, 1967, 260-266

TOPIC TAGS: semiconductor crystal, zinc compound, cadmium compound, beryllium compound, phosphide, arsenide, nitride, germanium compound, tin compound, silicon compound

ABSTRACT: Difficulties in the synthesis of certain semiconducting compounds of type $A^{II}B^{IV}C^V_2$ and the variety and special features of their properties led to the following directions of research in this area: study of the synthesis and crystallization of the compounds in general and in metallic solutions in particular, elucidation of the stability criteria for multicomponent compounds, conditions of phase transformations, study of the width of the region of homogeneity, and behavior of impurities in complex semiconducting phases. The following compounds were thus investigated: $ZnSiP_2$, $ZnGeP_2$, $CdSiP_2$, $AsSiAs_2$, $CdGeP_2$, $ZnGeAs_2$, $ZnSnAs_2$, $CdGeAs_2$ and $CdSnAs_2$. It is shown that they can be divided into three groups: (1) compounds with a very narrow region of homogeneity ($CdSnAs_2$, $ZnSnAs_2$, $ZnSiAs_2$). When they are synthesized with certain components in excess over the stoichiometric amounts, the excess components form a separate phase,

Card 1/2

UDC: 537.31.33

ACC NR: AP7008519

and a careful determination of the unit cell parameters does not show any changes of the cell constants; nor is there any change in conductivity type. (2) Compounds in which the size and shape of the unit cell change moderately with changing composition (CdGeAs₂, CdGeP₂). In CdGeAs₂ crystals the conductivity type changes with the composition. (3) Compounds capable of dissolving a relatively large amount (~20 mole %) of a group IV element (ZnGeAs₂, ZnGeP₂, ZnSiP₂), this being associated with a structural transition. It is concluded that A^{II}B^{IV}C^{IV}₂ compounds can find the same applications as semiconductors of types A^{III}B^V and A^{IV}. Orig. art. has: 5 figures and 5 tables.

SUB CODE: 07,20/ SUBM DATE: 27Jan66/ ORIG REF: 012/ OTH REF: 005

Card 2/2

THET'YAKOV, D.P.

Hand truck used for carrying chaff. Obm. tekhn. opyt. [MLP] no.4:29
'56. (MIRA 11:10)

(Hand trucks)

TRET'YAKOV, D.P.

Repairing valve chests of steam pumps. Obm. tekhn. opyt. [MLP] no.4:31
'56. (MIRA 11:10)

(Pumping machinery--Maintenance and repair)

TRET'YAKOV, D.P.

Manufacturing water pipe fittings using gas pipes and jointless
pipes. Obm. tekhn. opyt. [MLP] no. 4142-43 '56. (MIRA 11:10)
(Pipe fittings)

BUGAYEV, Aleksey Alekseyevich, tokar'; IZVEKOV, Arkadiy Ivanovich, master elektrikov; TRET'YAKOV, Eduard Aleksandrovich, inzh.-tekhnolog; ORZHEKHOVSKIY, Pavel Iosifovich, slesar'; LITUS, Il'ya Sil'vestrovich; BABANOV, Nikolay Fedorovich, starshiy master; SYRODOYEV, Aleksandr Konstantinovich, mekhanik; TERENIK, Mikhail Semenovich; LADYGIN, Aleksandr Iosifovich

From the rostrum of a plant meeting. Izobr.i rats. no.12:24-28
D '58. (MIRA 11:12)

1. Novo-Kramatorskiy mashinostroitel'nyy zavod (for all). 2. Mekhanicheskiy tsekh No.5 (for Bugayev). 3. Mekhanicheskiy tsekh No. 7, predsedatel' tsekhovogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Izvekov). 4. Upolnomochennyy Byuro ratsionalizatorov i izobretateley v 1-m mekhanicheskom tsekhe (for Tret'yakov). 5. Mekhanicheskiy tsekh No.7 (for Orzhekhovskiy). 6. Rukovoditel' sekti sodeystviya izobretatel'stvu i ratsionalizatsii Soveta veteranov truda (for Litus). 7. Fasonnoliteynyy tsekh No.1 (for Babanov, Syroyedov). 8. Nachal'nik otdela tekhnicheskoy informatsii i izobretatel'stva (for Terenik). 9. Prodsedatel' zavodskogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Ladygin).
(Kramatorsk--Machinery industry)

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001756530006-8

APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001756530006-8"

TRET'YAKOV, E.V.

133-6-11/33

AUTHORS: Tret'yakov, E.V. and Makovskiy, V.A. (Engineers).

TITLE: On the problem of conversion of high phosphorous iron in tilting open hearth furnaces. (K voprosu o peredele vysokofosforistykh chugunov v kachayushchikhsya martenovskikh pechakh).

PERIODICAL: "Stal'" (Steel), 1957, No.6, pp.517-519 (USSR).

ABSTRACT: This article was written in connection with the paper of Prof. K.G.Trubin ("Stal'", 1956, No.9) in which the view was expressed that the Talbot process is the most suitable method of processing high phosphorous iron in tilting open hearth furnaces. On the basis of experience gained in the Azovstal' melting shop where the Talbot method was tested on 350 t. tilting open hearth furnaces, the present authors disagree with the above view. The comparison of operating data on heats carried out by the Talbot method and the usual works practice during the production of rimming and killed steels is given in a table and Figs.1, 2 and 3. The influence of the amount of metal left in the furnace on its output is shown in Fig.4. It is concluded that the melting practice of high phosphorus iron in large tilting furnaces with the application of oxygen is at present the most productive of all other practices. The Talbot process, al-

Card 1/2

On the problem of conversion of high phosphorous iron in tilting open hearth furnaces. (Cont.) 133-6-11/33

though it has some positive features, does not give an increase in the furnace productivity. It is considered that for further improvement in the conversion of high phosphorus iron, a wider application of oxygen supplied to flame and the bath as well as the use of some new more efficient materials (like self-fluxing sinter, lime-ore briquettes) and more rational methods of charging granular materials, speeding up the process of slag formation, are necessary.

There are 4 figures, 1 table and 4 references, all Slavic.

ASSOCIATION: Azovstal' Works. (Zavod "Azovstal'").

AVAILABLE: Library of Congress

Card 2/2

135-58-7-6/20

AUTHOR: Tret'yakov, F.Ye., Candidate of Technical Sciences, and Kainova, G.Ye., Engineer

TITLE: The Strength of Various Types of Contact Welded Joints in "VT1" Titanium (Prochnost' razlichnykh tipov soyedineniy titana VT1 vypolnennykh kontaktnoy svarkoy)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 7, pp 19-23 (USSR)

ABSTRACT: The article presents information on the results of experiments carried out by the plant together with NIAT under the direction of M.A. El'yasheva, Candidate of Technical Sciences. The mechanical properties and the chemical composition of base metal used for the experiments, the welding technology, the shape of specimens and the results of experiments are given in tables. The following conclusions are made: 1) the strength coefficient of roller welded butt joints with straps and overlap joints in "VT1" titanium under static load, at room and higher temperatures, is 0.9 to 1.0; 2) the strength of double-row spot welded overlap and butt joints, with straps under static and cyclic load of low frequency, is higher than that of single-row spot joints. Under high-frequency cyclic load, the double-row spot welds have the same strength as the single-row welds but are

Card 1/2

135-58-7-6/20

The Strength of Various Types of Contact Welded Joints in "VT1" Titanium

inferior in respect to weight; 3) reduced distances between spots improve the strength of joints. Under high-frequency cyclic load, there exists an optimum of the interspot distance at which a base metal of given thickness is fully utilized; 4) the endurance limit of spot and roller welded joints under cyclic load of high frequency is very low, therefore it is necessary to find better forms of joints for "VT1" titanium joints under such working conditions; 5) the strength of welded joints under cyclic load drops with rising temperatures to a lesser degree than the strength of base metal. There are 7 tables, 1 photo and 6 graphs.

1. Spot welds---Mechanical properties 2. Welded joints---Test results

Card 2/2

SOV-135-58-9-11/20

AUTHORS: Zaburdin, M.K., Zakharenko, V.F., Shestakov, S.N., Engineers,
and Tret'yakov, F.Ye., Candidate of Technical Sciences

TITLE: Butt Welding of Titanium and its Alloys on Modernized
MSGA-300" Machines (Stykovaya svarka titana i yego splavov
na modernizirovannykh mashinakh tipa MSGA-300)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 9, pp 36-39 (USSR)

ABSTRACT: Information is presented on experimental investigations
carried out by NIAT on butt contact welding of titanium
ring blanks up to a cross section of 8,000 mm². Commer-
cially pure "VT-1D" and "VT-6" titanium (chemical composi-
tions given in table 1) were investigated and it was stated
that these titanium grades can be welded with or without
preheating in accordance with technological parameters
given in tables 3 and 4. Welding in argon is recommended
and can be performed on modernized machines of the type
"MSGA-300" or "MSGA-500" used at the "Elektrik" Plant.
There are 4 tables, 6 micro-photos, 2 graphs and 1 diagram.

1. Titanium--Welding 2. Titanium alloys--Welding 3. Titanium
alloys--Physical properties 4. Argon--Applications

Card 1/1

TRET'YAKOV, Ye.F.; GRISHUK, G.I.; GOL'DIN, L.L.

~~Study of the internal conversion electrons of the lower excited levels of U²³⁵~~ [with summary in English]. Zhur. eksp. i teor. fiz. (MIRA 11:5)
34 no.4:811-819 Ap '58.
(Uranium--Isotopes) (Nuclear shell theory)
(Electrons)

TRET'YAKOV, Feoktist Ivanovich

ASATUROV, Georgiy Borisovich; TRET'YAKOV, Feoktist Ivanovich

[Self-feeders for swine] Samokormushki dlia svinei. Moskva,
Ministerstvo sovkhovov SSSR, 1956. 22p. (MLBA 10:5)
(Swine houses and equipment)

PA 4T40

TRET'YAKOV, F. E.

Apr 1947

USSR/Welding, Arc
Stainless Steel

"Arc Welding of Thin Mark EYAT Stainless Steel,"
F E Tret'yakov, 1 p

"Avtogennoye Delo" No 4

Very brief discussion, with tables, coming to a
conclusion favorable to the method.

4T40

1ST AND 2ND COLUMNS										3RD AND 4TH COLUMNS									
<p>5</p> <p>TRITYAKOV, E. I.</p>										<p>17</p> <p>INFLUENCE OF THERMAL TREATMENT ON THE STRENGTH OF WELDED SPOTS IN THE WELDING OF CHROMANIL STEEL. P. E. TRITYAKOV. (Aviatsionnoe Delo, 1948, No. 4, pp. 25-26). [In Russian]. The results are presented of an experimental investigation on the spot-welding of Chromanil steel. Plates 100 x 20 mm. and 1 to 3 mm. thick were spot-welded in standard machines with electrode pressures of 65-130 kg., with different types of heat-treatment before and after welding. The joints were subjected to mechanical tests and metallographic and X-ray investigation. It is concluded that: (1) The steel can be spot-welded both in the hardened and tempered states; (2) the overheating evident in the core of the spot can be eliminated by tempering; (3) the region of the spot is hardened; (4) the strength of the weld can be increased by heat-treatment; and (5) the welding time must be not less than 1-5 sec. — S. K.</p>									
<p>ASIA-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>										<p>E-2</p>									
<p>1ST AND 2ND COLUMNS</p>										<p>3RD AND 4TH COLUMNS</p>									

M

20

Roller Welding of Aluminium Alloys in Motor Construction. F. E. Trotyakov and R. D. Orlov (*Artyg. Dela*, 1948, (7), 22-23).—[In Russian]. Roller welding of sheets of the aluminium alloy AMTsP of thickness 1.5 + 1.0 + 1.5 mm. is practicable and economical in cases of mass production. A 350-kVA. roller machine with ignitron circuit-breaker is quite suitable. Attention should be paid to surface uniformity of the parts, stability of the working section of the rollers, cooling of the conducting parts of the machine, and the stability of the parameters of the welding system. Pickling in alkalies does not appear to be a sufficiently reliable method for preparing the surface. Pickling which secures a polished uniform surface should be used. The usual test for air-tightness of the seams cannot easily be applied. It is desirable to submit the joint to a vibrating load, and keep the inside dry.—W. J. K.

TRIT'YAKOV, F. M.

62/49T77

USSR/Metals

Stainless Steel
Steel Castings

Dec 48

"Action of Zinc During the Welding and
Annealing of Type Kralt Stainless Steel,"
F. Ye. Trit'yakov, Engg, 1 p

"Avtogen Delo" No 12

Many cracks were noticed in parts being manu-
factured from Kralt steel. After much research
determined that the presence of zinc (which
was used in the molds) caused these cracks.

Established a process whereby all possibility
62/49T77

USSR/Metals (Contd)

Dec 48

of zinc remains on castings was eliminated.
Method consists of six steps, involving use
of a weak HCl solution (one part HCl to nine
parts water) for eliminating any zinc residue.

62/49T77

225-450. Automatic Unidirectional Spot Welding of Steel. (In Russian.) F. E. Tret'yakov and G. I. Motin. *Autogennoe Delo* (Welding), July 1949, p. 13-15.

Possibility of replacing manual arc welding of all-metal joint assemblies by automatic spot welding. Equipment, including electrical circuits. Operating conditions for different thicknesses of sheet.

TRET'YAKOV, F. Ye.,

Engineer

"Automatic one-sided spot welding of steel,"
Avtogen. Delo, No. 7, 1942

5

10

The Influence of Zinc in the Welding and Heat Treatment of Mark B Zn 1.2 Stainless Steel. F. E. Troychov. (Avto-
metallurgiya, 1946, No. 12, p. 127. (In Russian). The
present formation of cracks during the heat-treatment of
rolled articles made from a chromium-nickel steel was
found to be attributable to the presence of thin films of zinc.
Careful removal of the zinc with hydrochloric acid after
depressing prevented cracking.—S. K.

ASH-15A METALLURGICAL LITERATURE CLASSIFICATION

TRET'YAKOV, F. YE.

USSR/Metals - Duralumin, Welding

Feb 52

"Argon-Arc Welding of Duralumin," F. Ye. Tret'-
yakov, Engr

"Avtogen Delo" No 2, pp 10-13

Discusses technology of welding duralumin with
wolfram electrode in argon atm. Clad duralumin
in shape of 200 x 100 mm plates 0.8 to 3 mm thick
was used as base metal in hardened and annealed
states. Established welding conditions and filler
materials for obtaining hermeticity, high corro-
sion resistance and sufficient weld strength.

212T85

AID P - 5056

Subject : USSR/Engineering-Welding
Card 1/1 Pub. 107-a - 5/9
Authors : Tret'yakov, F. E., A. B. Karan and S. M. Valeyev
Title : Arc-welding of thin steel plates with a CO₂ shield
Periodical : Svar. proizv., 20-22, My 1956
Abstract : The authors present the results of their experimental research on automatic and manual carbon dioxide arc welding of steel plates 1 to 3 mm thick, carried out at the "Elektrik" (Electrician) Plant (Leningrad). The ADS-1000-2 welder was used, some other equipment and electrodes were described. Five tables, 2 diagrams, 2 graphs, 3 photos, and GOST standards.
Institutions: Scientific Research Institute of Aviation Technology (NIAT), All Union Scientific Research Institute of the Autogenous Treatment of Metals (VNIIAvtogen).
Submitted : No date

TRET'YAKOV, F. Ye.

AID P - 5405

Subject : USSR/Engineering

Card 1/2 Pub. 107a - 7/12

Author : Tret'yakov, F. Ye., Kand. of Tech. Sci.

Title : Experiments in industrial welding of titanium

Periodical : Svar. proizv., 10, 22-27, 0 1956

Abstract : The author presents briefly results of his experiments on the weldability of titanium sheets 0.8 to 3mm thick and 50 by 100mm large. He describes the various methods used, such as the argon-electric arc butt welding, the automatic welding with melting electrodes and AN-T1 flux, the spot, roller and butt resistance welding and further treatment. He makes several practical suggestions. Seven tables, 3 graphs, 2 micro-pictures, GOST standard; 3 Russian references (1950-56) and 2 foreign references (1950, 55).

AID P - 5405

Svar. proizv., 10, 22-27, 0 1956

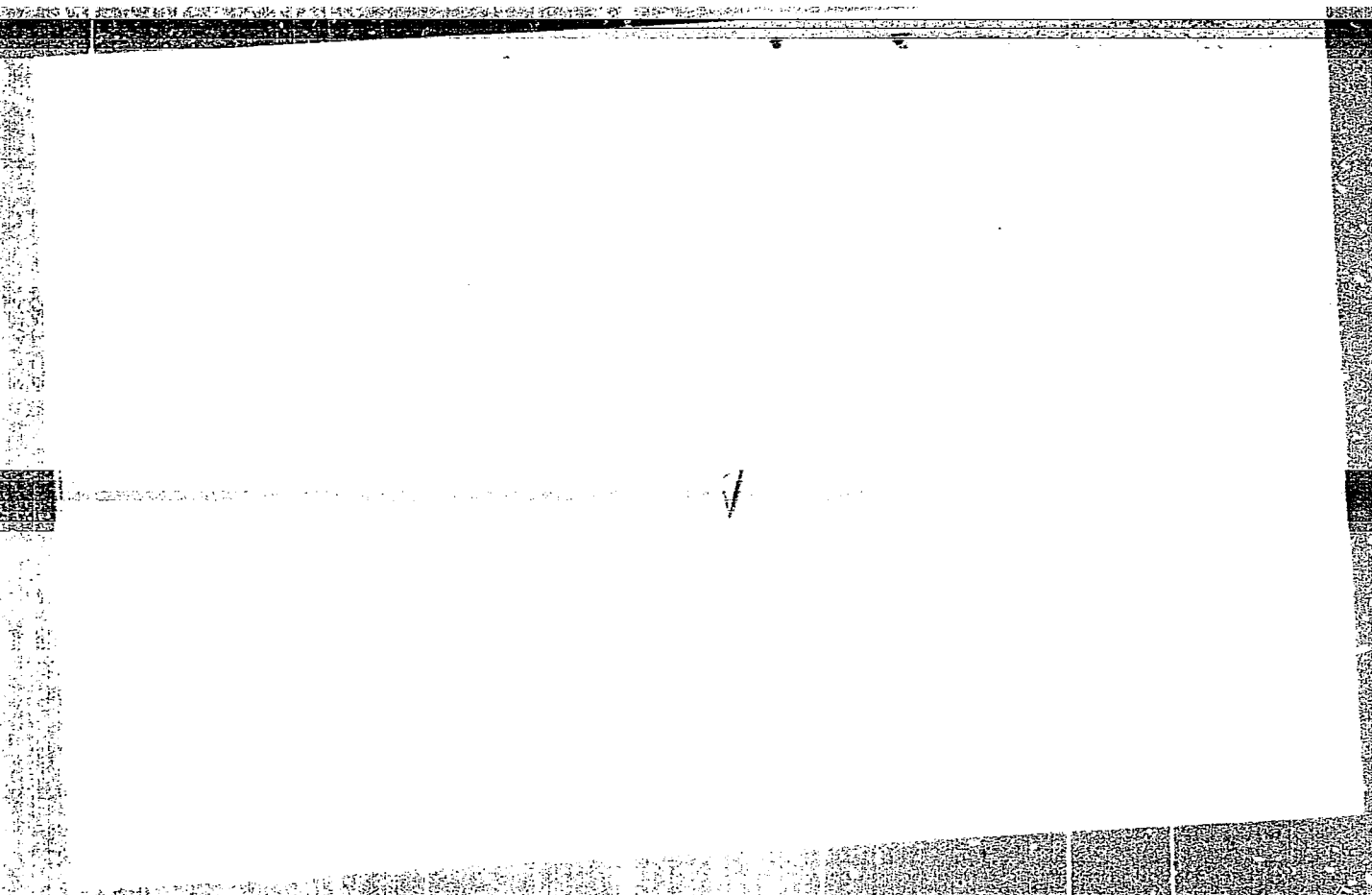
Card 2/2 Pub. 107a - 7/12

Institution : Scientific and Technical Section of the Machine-Building
Industry (NTO MASHPROM).

Submitted : No date

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001756530006-8



APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001756530006-8"

44010
S/860/61/000/000/005/020
A006/A101

1.2200

AUTHORS: Azarenko, N. T., Yerokhin, A. A., Tret'yakov, F. Ye.

TITLE: An electrode for automatic arc welding

SOURCE: Sbornik izobreteniy; svarochnaya tekhnika. Kom. po delam izobr. i otkrytiy. Moscow, Tsentr. byuro tekhn. inform. 1961, 116 (Author's Certificate no. 108341, cl. 21h, 30₁₆; no. 561807 of November 23, 1956)

TEXT: Electrodes with a 3H-395 (EI-395) steel rod are suggested for welding low and medium-alloyed steels using flux FH-2 (FN-2). The EI-395 steel contains 25% nickel, 15% chromium, 6% molybdenum and the rest iron. This composition assures reduced crack sensitivity of the weld during automatic submerged arc welding with FN-2 type flux. The mechanical properties of the weld are stable; the weld metal shows high toughness and high relative elongation and contraction. y

Card 1/1

TRET'YAKOV, F. Ye.
TRET'YAKOV, F. Ye. and SHORSHCROV, M. Kh. (Candidates of Technical Sciences)
GORYATCHEV, A. P. and POLYAKOV, D. A. (Engineers)

"Welding of Titanium,"

paper presented at All-Union Scientific-Technical Conference on Welding in
Shielding Gases, Leningrad, Dec 1957.

(Svarochnoye Proizvodstvo, 1958, No. 4, pp 46-47 - author Tyul'kov, M. D.)

TRET'YAKOV, F Ye.

135-5-8/14

SUBJECT: USSR/Welding.

AUTHORS: El'yasheva, M.A., Candidate of Technical Sciences, and
Tret'yakov, F.Ye., Candidate of Technical Sciences.

TITLE: Strength of Titanium "BT1Д" and Its Welded Joints at Different
Temperatures. (Prochnost' titana BT1Д i ego svarnykh soyedineniy
pri razlichnykh temperaturakh).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 5, pp 22-24 (USSR).

ABSTRACT: The article gives data on the strength of technical titanium
"BT1Д" obtained in experiments with mechanical arc welding in
argon, in butt joints welded without melting electrodes, and in
lap-spot joints. Sheet titanium of 1.4 mm thickness was taken
as base metal containing 0.06 % C and 0.12% Al, traces of iron
and silicon, 0.013 % H₂, and 0.13 O₂. The technology of the tests
is given in detail. Recrystallization processes and the nature
of failures at different temperatures were studied. A difference
in the behaviour of weld metal and base metal was observed, as
for instance; at temperatures above 100°C failures occur in the
base metal only; with rising temperature (from 0° and higher)
the strength of spot welds decreases in lesser degree than the

Card 1/3

135-5-8/14

TITLE:

Strength of Titanium "BT1A" and Its Welded Joints at Different Temperatures. (Prochnost' titana BT1A i ego svarnykh soyedineniy pri razlichnykh temperaturakh).

strength of the base metal; with dropping temperatures (from 0° to -196°C) the strength of welds decreases, whereas the strength of base metal increases.

In general, the results obtained demonstrated that the welds possessed a sufficiently high static strength as compared to the base metal at normal and at higher temperatures. The butt welds had the same static strength as the base metal. The spot welds had a lower strength at normal temperatures than the base metal. With rising temperatures this difference decreased, but at temperatures dropping below zero it increased and the strength of spot welds abruptly decreased in comparison with the base metal.

The data obtained by L.N. Sokolov, V.P. Elyutin, and V.I. Yaleskiy ("Izvestiya Akademii Nauk SSSR" #3, 1954) are mentioned as being in accordance with the results of subject investigation.

The article contains 3 diagrams and 3 photographs (micro- and macro-structure).

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135-5-8/14

TITLE: Strength of Titanium "BT1A" and Its Welded Joints at Different Temperatures. (Prochnost' titana BT1A i ego svarnykh soedineniy pri razlichnykh temperaturakh).

ASSOCIATION: Not stated.

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 3/3

88660

S/137/60/000/012/017/041
A006/A001

12300

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 12, p. 135,
29133

AUTHOR: Tret'yakov, F.Ye.

TITLE: Peculiarities in Welding Commercial Titanium

PERIODICAL: Tr. Nauchno-tekhn. o-va sudostroito. prom-sti, 1959, No. 33, pp.
73 - 84

TEXT: Some data are presented on a method of evaluating the weldability of commercial Ti and on basic peculiarities of the welding technology. Besides conventional comparison of mechanical properties of the base metal and the weld joints (strength, bending angle, δ and ψ) the author suggests to evaluate the weldability of commercial Ti by determining the structural strength of a natural work piece (cylindrical container). Welding of Ti with minimum linear energy ensures high quality weld joints. It was established that commercial Ti was not prone to hot cracks. The basic cause of cold cracking in weld joints is the increased gas content in the seam and in the base metal. Cracks may also arise during the trimming of the work piece. Annealing at 600 - 650°C for 45 - 60 minu-

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88669

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A006/A001

Peculiarities in Welding Commercial Titanium

tes immediately after welding is one of the radical means to prevent cracking. The cracks are removed by cutting out the deficient spots and welding-on patches. The mechanical properties of weld joints approach those of the base metal. Deformation of Ti weld joints is considerably lower than that of stainless steel and Al-alloys. In argon-arc welding σ_w of weld joints is lower than σ_w of the base metal by 30%, in-seam welding by 80% and in spot welding by 95%. ✓

G. N.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

MORAVSKIY, Vladislav Eduardovich. Prinimali uchastiye: SVECHNIKOV, S.V.,
kand.tekhn.nauk; ROSSOSHINSKIY, A.A., kand.tekhn.nauk. TRET'YAKOV,
F.Ye., kand.tekhn.nauk, retsenzent; LEYNACHUK, Ye.I., kand.tekhn.
nauk, red.; ONISHCHENKO, N.P., red.

[Condenser discharge welding of small thickness metals] Kondensa-
tornaia svarka metallov malykh tolshchin. Moskva, Gos.nauchno-
tekhn.izd-vo mashinostroit.lit-ry, 1960. 143 p.

(MIRA 13:7)

(Electric welding)

S/135/60/000/001/004/005
A006/A001

AUTHORS: Tret'yakov, Fe. Ye., Candidate of Technical Sciences, Karan, A. B.,
Engineer, Tsar'kov, G. P., Technician

TITLE: The Strength of AMГ6T (AMG6T) Alloy Spot Welds at High Temperatures

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 1, pp. 27-28

TEXT: Data are presented on the strength of AMG6T alloy spot welds subjected to shearing and rupture tests at 20, 200 and 300°C. The specimens were welded on a МТИП-450-2 (MTIP-450-2) three-phase pulse machine. Prior to welding they were etched in orthophosphoric acid. Cadmium-copper electrodes were used. The diameter of welded spots was selected depending on the thickness of the parts to be welded according to industrial instructions. The penetration depth was 40 to 50% of the sheet thickness under welding conditions given in Table 1. The welded specimens were tested on a 30-ton machine equipped with a heating installation which ensured the uniform heating of specimens up to 300°C. ✓
The temperature was checked with an ЭПД-17 (EPD-17) thermoregulator. During the tests the specimen was held for 5 minutes at the given temperature and was then subjected to loading until its breakdown. When subjected to static shearing

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S/135/60/000/001/004/005
A006/A001

The Strength of AMΓ6T (AMG6T) Alloy Spot Welds at High Temperatures

the strength of a single-spot weld decreased in 1 - 2 mm thick specimens by 8 - 15% at 200°C and by 24 - 39% at 300°C, as compared to the strength at normal temperature. The strength of single spot welds of 1 - 3 mm thick specimens subjected to static rupture increased slightly at 200°C and decreased at 300°C by 20 - 32% as compared to normal temperature. The ductility of the spot weld was estimated by calculating the ratio $\frac{R_{rupt}}{R_{sh}} \cdot 100\%$ ✓

where R_{rupt} and R_{sh} are the corresponding breaking forces in rupture and shearing tests. This ratio increases generally with a greater thickness of the material and higher temperature of tests when welding AMG6T alloys. [Abstractor's note: Subscripts rupt and sh are translations from the original of (otryv - rupture) and sr (srez - shear)]. There are 2 figures and 2 tables.

Card 2/2

TREF'YAKOV, F.Ye., kand.tekhn.nauk; FREYDLINA, Ye.Yu., teknik

Weld joining cast 27KhGSNL steel with low-alloy structural steels.
Svar. proizv. no.11:30-32 N '60. (MIRA 13:10)
(Steel--Welding)

85187

S/135/60/000/003/004/005

A115/A029

1. 2300 only 2208, 2708

AUTHORS: Tret'yakov, F.Ye., Candidate of Technical Sciences, Karan, A.B.,
Graduate Engineer and Tsar'kov, G.P., Technician

TITLE: Relief Welding of Alloyed Steel and Titanium Parts

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 3, pp. 35-37

TEXT: The authors describe relief welding of anchor nuts, bushes and connecting pipes of BT-1 (VT-1) titanium or EI 654 (EI 654) and 30XГСА (30KhGSA) steel. All parts were welded to 2-3 mm plates. Ring-embossed parts were made of rod-iron on a turning-lathe and had a class 4 surface finish according to ГОСТ-2789-51 (GOST-2789-51). Anchor nuts were subjected to hard forging, hardening and sand-blasting. Parts of VT-1 titanium and EI 654 steel were degreased with acetone and sometimes finished with medium emery cloth. Satisfactory results were obtained with titanium (Fig. 1a), EI 654 steel (Fig. 1b) anchor nuts, VT-1 titanium and EI 654 connecting steel pipes and bushes (Fig. 1v, g), and double-looped anchor bolts of EI 654 and 30 KhGSA steel (Fig. 2). Special electrodes of cadmium copper and МЦ-4 (MTs-4) alloy of NV 110 hardness were used. Relief contact welding of an anchor nut is shown in Figure 3. Single-phase МТП-75 (MTP-75) welding machines equipped with ПИТ-100 (PIT-100) cur-

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85187

S/135/60/000/003/004/005
A115/A029

Relief Welding of Alloyed Steel and Titanium Parts

rent contact breakers and PACT-4A (RAST-4A) stabilizers and MTIP-450-2 (MTIP-450-2) continuous current welding machines were used. The success of welding depends on the smooth contact surface of the electrodes and close adhesion of the pattern to the weldments. Recommended welding conditions are shown in a table on Page 36. The quality of the welds was determined by technological tests (Fig. 4), macrostructural examination and airtightness tests. No defects were revealed. Figure 5 shows the macrostructure of a connecting pipe. Airtightness tests were performed at 5 atm. Parts in which non-fusion is discovered can be subjected to repeated processing with a 10-15 % higher voltage. There is a table and 5 figures.

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S/135/60/000/005/007/009
A115/A029

AUTHORS: Tret'yakov, F.Ye., Candidate of Technical Sciences; Freydlina, Ye.
Yu., Technician

TITLE: Welding EI 712 (12X2HBΦA) [EI 712 (12Kh2NVFA)] Steel

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 5, pp. 36 - 37

TEXT: The purpose of this work was to find out weldments of low-alloyed EI 712 (12Kh2NVFA) steel of such quality that no after-welding thermal treatment would be necessary. The presence of nickel, tungsten, vanadium, chromium and manganese ensures deep tempering, preserving simultaneously a high plasticity of the weldments. Chemical composition and mechanical properties are given in Tables 1 and 2. Welding tests of this steel of 1.5, 1.8, 2 and 3 mm thickness in annealed, normalized and tempered conditions before and after welding were performed. The heat treatment condition is shown in Table 3. In all cases the surface has been sandblasted. Standard equipment was used for welding. The quality of weldments was tested visually and by X-rays. The results of tests of mechanical properties of specimens without thermal after-welding treatment shown in Table 6 prove high firmness of weldments before and after thermal treat- ✓

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S/135/60/000/005/007/009
A115/A029

Welding 3N712 (12X2HB4A) [EI 712 (12Kh2NVFA)] Steel

ment. Besides, this steel (up to 1.5 mm thickness) can be welded without additional material. Tempering of specimens after welding shows slight strengthening. Metallographic studies proved absence of defects in seams. EI 712 steel in tempered or normal condition furnishes good weldments by manual arc-welding, argon-arc shield-welding, automatic argon or carbonic acid welding and does not require subsequent thermal treatment. Welding can be done with additional consumable or non-consumable electrodes. The toughness of weldments equals that of the basic material. EI 712 steel can be used for large high-load weldments which cannot be exposed to thermal treatment after welding.

Card 2/2

S/135/60/000/011/009/016
A006/A001

AUTHORS: Tret'yakov, F.Ye., Candidate of Technical Sciences, Preydlina.
Ye.Yu., Technician

TITLE: Welding Cast 27XГCHЛ (27KhGSNL) Steel With Low-Alloy Structural
Steels

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 11, pp. 30-32

TEXT: An investigation was made to develop a technology for welding cast 27KhGSNL steel parts with sheet parts of 25XГCA (25KhGSA) and 3M-712 (EI712) steels. The 27KhGSNL steel is composed as follows: 0.24 - 0.30% C; 0.5 - 0.8% Si; 0.9 - 1.2% Mn; 0.7 - 1.0% Ni; S and P \leq 0.035%. Welded cast 27KhGSNL steel plates were subjected to annealing prior to welding and subsequent milling to 2.5 and 5 mm thickness. After welding with HWAT-3M (NIAT-3M) electrodes they were heat treated. Mechanical properties on standard flat specimens made of heat-treated plates were determined (oil quenching at 890 C - 10°C; tempering at 200 - 240°C). Holding time for quenching of 1.5 - 2.5 mm thick specimens was 5 - 7 minutes and for 3.0 - 5.0 mm thick specimens it was 10 to 15 minutes. Tempering time was 2 hours. The specimens were tested at

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